

REMARKS

Reconsideration of the application in light of the amendments and the following remarks is respectfully requested.

Status of the Claims

Claims 1-12 are pending. Claims 1 and 11 have been amended. No new matter has been added.

Status of the Specification

The Examiner has objected to the Abstract for containing "Fig. 1." Applicants have provided a replacement Abstract herein. This replacement Abstract differs from the previous Abstract by eliminating "Fig. 1," and additionally has been amended to be less than 150 words in length. No new matter has been added. Applicants request withdrawal of this objection.

Rejection Under 35 U.S.C. § 102

Claims 1, 3-4 and 8-12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,031,495 to Simmons et al. ("Simmons").

The Examiner contends that Simmons discloses the features of independent claims 1 and 11 including an "outline of a radiating element of the antenna forming a planar figure" and a "plane defined by the outline is substantially perpendicular to the ground plane of the radio device." (Detailed Action, page 2, item 3.)

Applicants respectfully submit that Simmons discloses an antenna system 26 including a pair of radiating elements 28 and 30 formed from "electrically conductive materials such as flexible cable, helical wound coils, meandering conductive strips, telescopic conductors or other types of electrical conductor." The radiating elements 28, 30 are attached to a "micro-strip transmission

phasing device consist[ing] of three components, a center conductor 34, ground plane 36, and a substrate material 38.” (Simmons, column 2, lines 47-62, and Fig. 3.)

The Examiner considers the ground strip 36 of the micro-strip transmission phasing device to be the radio device ground plane. Simmons discloses that the ground strip 36 is part of the antenna structure. The Examiner is referred to column 3, lines 8-12, where Simmons discloses that “[t]he purpose of the ground plane is to confine the electric field. The width . . . is typically calculated as a function of the center conductor 34. The thickness of the ground plane 36 is dependent upon the electrical properties of the center conductor 34” A person of ordinary skill in the art would know that the ground plane of a radio device would not be constrained by the design considerations that Simmons discloses as being necessary for the ground plane of the micro-strip transmission phasing device included in the antenna 26. Further, a person of ordinary skill in the art would know that the radio device ground plane is larger than the ground strip 36 disclosed in Simmons.

Amended claims 1 and 11 recite a radiating element having an outline and that “a plane defined by said outline is substantially perpendicular to the ground plane of the radio device.” In contrast, Simmons discloses a pair of antenna 28, 30 (i.e., whip antennas) perpendicular to the ground plane of their phasing device. Thus, Simmons does not disclose a radiating element with an outline perpendicular to the ground plane of the radio device.

With respect to the rejection of dependent claim 10, the Examiner contends that Simmons discloses the claimed feature of “in the direction of the normal of the radiating element an edge of the ground plane is limited to a certain distance from the radiating element to improve a matching of the antenna.” However, Applicants submit that “the ground plane” has antecedence to “the ground plane of the radio device,” which Applicants have demonstrated is not disclosed by Simmons. Additionally, there is no disclosure within Simmons that the ground strip 36 is limited to a certain distance from the radiating element in the direction of the normal of the planar figure.

The Examiner contends that Simmons discloses most of the features of claims 5-6. The Examiner acknowledges that Simmons does not disclose inductive components and capacitive components. However, the Examiner cites Ito as disclosing the feature of claims 5-6 missing from Simmons. The Examiner states it would have been obvious for a person of ordinary skill in the art at the time of the invention to combine Simmons and Ito to achieve the invention of claims 5-6.

Claim 2 depends from claim 1. Claims 5-6 depend from claim 1. Each of claims 2 and 5-6 recite the features of claim 1 as if set forth therein in their entirety. Applicants submit that neither Yanaglsawa nor Ito disclose, or suggest, the features of claims 2 and 5-6 demonstrated above to be missing from Simmons. Therefore, Applicants submit that claim 2 is patentable over Simmons and Yanaglsawa, and that claims 5-6 are patentable over Simmons and Ito for at least the same reasons as demonstrated above with respect to claim 1. Thus, the Examiner has failed to meet the burden of establishing a *prima facie* case of obviousness over claims 2 and 5-6. Reconsideration and withdrawal of the rejection is requested.

